REMARKS

Terminal Disclaimer

In accordance with page 3 of the outstanding office action, the undersigned is empowered to sign terminal disclaimers on behalf of the assignee, Ceramem Corporation. Accordingly, please accept the terminal disclaimer filed on 11/16/06.

The applicant will also be filing a new power of attorney.

Claim Rejections- 35 U.S.C. § 112

The Examiner rejected claims 2-7 and 9-11 under 35 U.S.C. § 112, first paragraph, concerning the limitation "without encountering an egress…", as set forth on page 4 of the Office Action.

The applicant submits that there is support for this limitation in the specification. Figure 1 shows egress slots proximate both ends of the monolith (slot sets 3 and 4). Figure 2 shows egress conduits 6 and 7 at the monolith ends. The only other means by which sweep fluid could leave the permeate chambers to the external surface of the membrane element would be for it to pass through the skin of the monolith. Some may potentially do so, but the provision of outlet ports is the means by which the great majority would leave the membrane element (which is a reason that the amendments state that "*substantially all*" of the sweep fluid flows substantially through the entire length of the permeate chambers, as opposed to saying that "*all*" of the sweep fluid moves through these channels). This is sufficient support for the subject claim limitation. This conclusion is not affected by the fact that paragraph [0028] teaches an alternative embodiment with additional egress channels.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejected claims 2, 3, 5-7, and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,077,436 ("*Rajnik*") in view of U.S. Patent 4,781,831 ("*Goldsmith*"). *May 16, 2006 Office Action*, at pages 3-6.

The Applicant has amended independent claim 9, and respectfully traverses the rejection.

Independent claim 9, as amended, is patentable over *Rajnik* and *Goldsmith* because the combined references do not disclose all the elements of amended claim 9.

"To establish *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03, *citing*, *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *Id.*, *citing*, *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (CCPA 1970).

The Applicant respectfully contends that neither *Rajnik* nor *Goldsmith* disclose a housing with "a sweep fluid inlet port" and "a sweep fluid and permeate outlet port," "where the sweep fluid inlet port and the sweep fluid and permeate outlet port are configured such that substantially all of the sweep fluid flows substantially through the entire length of the permeate chambers without encountering an egress to an external surface of the membrane element." In addition, the Applicant respectfully contends that neither *Rajnik* nor *Goldsmith* disclose a housing where the permeate channels or channel are proximate the end faces of the monolith.

Goldsmith discloses a cross-flow filtration device that "receives a feed stock at a feed end and the walls of the passageways conduct the filtrate to the filtrate conduits while passing the impermeable materials as retentate from a retentate end." *Goldsmith*, at col. 5, lines 58-62. *Goldsmith* does not disclose or suggest the use of a sweep flow, nor does *Goldsmith* disclose or

suggest a sweep fluid inlet port or a sweep fluid and permeate output port. And, *Goldsmith* could not be used to accomplish the invention, even if one were to use *Goldsmith* with a sweep fluid (which is not taught by Goldsmith). The *Goldsmith* embodiment of Fig. 7 has permeate (filtrate) egress slots 188 only at the retentate end of the monolith; such slots allow the filtrate to leave the monolith. Obviously, with only one set of egress channels it would not be possible to circulate sweep fluid. The Fig. 8 embodiment includes multiple sets of drilled holes along the length of the monolith, to allow the filtrate to leave the monolith at locations other than just the permeate end. Fig. 8 of *Goldsmith* is in this regard just like *Rajnik* (discussed below) in that the multiple, spaced egress points would prevent the device from being used in a manner in which substantially all of the sweep fluid flows along substantially the entire length of the permeate chambers in the monolith. As the *Goldsmith* device cannot be used to practice the claimed invention, it teaches away from the invention and so cannot be used to reject the claims.

Rajnik discloses a filtration device with two sets of passages, "one set of passages is referred to as primary channels, and the other set is referred to as egress conduits," *Rajnik*, at col. 4, lines 10-12, with a series of holes for manifolding distributed along the surface of the monolith. As shown in Figures 2 and 2A, "all of the primary channels 2, are shown adjacent to the exterior surface of the device, 3, or to the egress conduits 4...The means for manifolding are provided by holes, 5, drilled normal to the surface of the monolith. These holes penetrate into the interior of the monolith so that all of the egress channels communicate with the exterior. Flow of the filtrate occurs both through the egress conduits via the drilled holes and through the exterior surface of the extruded body." *Rajnik*, at col. 8, lines 55-65. Holes for manifolding are also shown in Figures 8 and 8a, reference 28; Figure 9, reference 30; and Figure 10, reference 34. Further, while not shown in any of the Figures, *Rajnik* mentions that the "egress conduits

can also be equipped with means of providing a second gas or liquid. This second gas or liquid can be a sweep gas or a reactive gas or mixture." *Rajnik*, at col. 6, lines 39-43.

If, as suggested, the egress conduits of *Rajnik* were equipped with means of providing a second gas as a sweep gas, the sweep gas, along with the filtrate, would flow through the egress conduits, *through the holes for manifolding distributed along the surface of the monolith*, and out of the monolith. Clearly, then, the sweep fluid could exit the monolith at any point along the length of the monolith, through the holes for manifolding, *without* flowing through substantially the entire length of the monolith.

As such, *Rajnik* does *not* disclose a housing with a sweep fluid inlet port and a sweep fluid and permeate outlet port "where the sweep fluid inlet port and the sweep fluid and permeate outlet port are configured s*uch that substantially all of the sweep fluid flows substantially through the entire length of the permeate chambers without encountering an egress to an external surface of the membrane element.*"

Further, *Rajnik* does not disclose or suggest that the holes for manifolding are "proximate the end faces" of the monolith. As shown in *Rajnik* Figures 2, 8, 24, 25 and 26a, the holes are distributed along the surface of the monolith and distant from the end faces.

In summary, then, neither *Goldsmith* nor *Rajnik* disclose all the elements of independent claim 9, nor could either reference be used to practice the invention of claim 9. Accordingly, claim 9 is clearly patentable over the cited references. And, additional secondary references do not alter this conclusion, as it is not possible to configure either Rajnik or Goldsmith to accomplish the invention claimed herein.

As independent claim 9 is patentable, claims 2-3, 5-7, and 10-11 must also be patentable, since "[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending

therefrom is nonobvious." M.P.E.P. § 2143.03, *citing*, *In re Fine*, 837 F.3d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). The Applicant respectfully submits that all pending claims are patentable over the cited references and requests allowance.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned in Westborough, Massachusetts, (508) 898-1501.

Respectfully submitted,

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